

HD-250 SYSTEM

FLUID APPLIED WATERPROOFING SYSTEM

250 Mil HYBRID WATERPROOFING FOR PLYWOOD SUBSTRATES

MATERIALS

1. 2.5 lbs/sq yd G60 Hot Dipped Galvanized Metal Lath
2. GU80-1 Base Coat Powder (gray)
3. GU80-1 Liquid Admixture
4. Pli-Dek Seam Paper
5. Fluid Applied Waterproofing Membrane (PMA, HR, or CR)
6. PMA-UV
7. PD-2014 Reemay Fabric
8. PolyScrim
9. Protection Course
10. PD Drain Board

TOOLS

1. Variable Speed Drill (capable of producing 1000 RPM's)
2. Wind-lock B-M1 mixing blade or equivalent
3. Extension Cord
4. Clean 5 Gallon Plastic Containers
5. Measuring Bucket (1 gal, 2 gal, etc.)
6. Hand Grinding Stone
7. Level
8. Pencil
9. Utility Knife
10. Scissors
11. Masking Tape
12. 4" x 22" Pool Trowel
13. Stainless Steel Trowel
14. Margin Trowel
15. Extension Handle
16. Compressor (1-1/2 horsepower, electric or better)
17. Air Hose
18. Semi-stiff Broom
19. Dust Mask
20. Goggles
21. Rubber or Cloth Gloves
22. Metal Spiked Golf Shoes
23. Hudson or Chapin Sprayer
24. Tin Snips
25. Pneumatic Staple Gun
26. Hudson or Chapin Sprayer
27. Melter

I. Substrate Inspection/ Preparation

A. GENERAL

1. Pli-Dek materials must be applied over sound dry exposure 1 sheathing decks.
**Contact Pli-Dek Systems, Inc. for installation approvals over OSB substrates.
2. All plywood substrates are recommended to be sloped 1/4" per foot.
3. Maximum deflection of the deck shall be less than L/360th of the span.
4. All inspections, as required by local building authorities, shall be the responsibility of the contractor, owner, and/or their agent.

B. Plywood

1. Plywood shall be a minimum of 16mm, 5/8" (3/4" recommended) sound and dry, exposure 1 sheathing, and have a recommended span between supports of 410mm (16") on center. All plywood shall be securely fastened to the supports with screws or ring shank nails spaced in accordance with APA guidelines and Building Code requirements.
2. Framing or blocking must support all plywood edges, except as per APA guidelines; blocking is not required when tongue and groove plywood is used.
3. The plywood surface shall be clean, dry, and free of dirt, dust, oil, paint, or any other contaminants that may impair adhesion.
4. All plywood seams shall be staggered, and gapped 3.2mm (1/8"). All seams shall be covered with a maximum of 50mm (2") wide flashing paper tacked in place. NOTE: If plywood is butted tightly, the seams shall be saw cut to provide a 3.2mm (1/8") gap between sheets, except tongue & groove. Ensure that the tongue and groove section of the plywood is installed so as to allow for expansion.
5. All adjacent edges of the plywood sheets shall not be more than 0.78mm (1/32") out of plane (i.e. above or below each other).
6. Plywood should be installed with a 6.4mm/.3m (1/4") per linear foot slope. Decks with parapet enclosures must be sloped to a drain or scupper.
7. Any variation from the framing specifications mentioned in Section I, requires written approval and system recommendations from Pli-Dek Systems, Inc.

B. FLASHING

1. Flashing shall be minimum 26 gauge, galvanized, bonderized sheet metal. NOTE: All metal flashing must be wiped clean with solvent to remove oils from the surface.
2. Openings shall be flashed before installation of doors and sliders. NOTE: If doors or sliders have been installed without proper flashing, we recommend they be removed and proper flashing installed.
3. All penetrations, including posts, or other objects that protrude through the deck shall be installed and flashed prior to applying the Pli-Dek materials.
4. All decks with a parapet surround require a scupper not less than 76mm (3") wide, and 100mm (4") high, spaced a maximum of 3.65m (12 ft) apart. Any scuppers or overflows shall be installed and flashed prior to applying Pli-Dek materials.

5. All deck drains must be flanged, and properly installed to a proper depth.
6. NOTE: Brass drains with a sheet metal flange are recommended.
7. Gravel stops shall have a maximum ground dimension of 3/16".
8. All flashing must be attached to the substrate with galvanized ring shank nails (minimum 25mm (1") length).
9. All flashing shall overlap adjacent pieces, a minimum of 100mm (4"), and seams caulked with an elastomeric caulking compound.
10. Deck/Wall interfaces must be flashed.
11. All stairs must be flashed.
12. When copper flashing/drains are used, ensure that all galvanized metal; such as, nails, staples, lath, drains, etc. does not come into contact with copper (do not allow any dissimilar metals to come in contact with each other). The contact of the two dissimilar metals will create rust and corrosion (electrolysis). **Contact Pli-Dek Systems, Inc. for additional details and recommendations.
13. See HD-250 Details for further instructions. Contact Pli-Dek Systems, Inc for written approval on flashing details that vary or are not included in Details.

C. SLOPING

1. It's the General Contractor's, his representative's, or individual owner's responsibility to assure adequate drainage.
2. Pli-Dek Systems, Inc. requires a slope of 1/4" per linear foot.
3. If auxiliary slope is required, Pli-Dek Slope Mix-DP may be applied. (See Sloping Application Instructions SM-DP-120 for complete details and limitations). When this type of sloping will not accommodate the problem, then drains become a necessity.
4. The alternatives available for proper drainage are the responsibility of the General Contractor. Contact Pli-Dek Systems, Inc. for complete details.
5. Additional sloping required on a project should be confirmed through a written proposal given by the trained applicator prior to the commencement of work.

D. RETROFIT/TEAR-OFF APPLICATION

1. Asphalt, coal tar pitch or other existing membrane shall be removed. CONTACT Pli-Dek Systems, Inc to review existing conditions for site specific requirements.

II. Mixing Instructions

A. GU80 BASE COAT

1. All Pli-Dek products should be stored in a cool dry place at the jobsite to avoid flash drying in the bucket.

2. Pour 3.8L (1 gallon) of GU80-1 Liquid Admixture into a clean 19L (5 gallon) plastic container.
3. Add one 21kg (46lb.) bag of GU80-1 Base Coat (gray), and mix thoroughly for 3 to 4 minutes. Use a Wind-lock B-M1 mixing blade, or equivalent, powered by a 13mm (1/2") variable speed drill, capable of producing 1000 RPMs. TIP: In areas subject to extremely dry and/or hot climates, it may be necessary to add water (up to .47L [1 pint] per mix). To avoid flash drying, it may be necessary to chill the GU80-1 Liquid Admixture before mixing. A proper safety ventilation mask should be worn when working with all Pli-Dek product.

III. Application

A. GU80-1 BASE COAT

1. Mix the GU80-1 Base Coat as described in Section II.
2. Pour the GU80-1 Base Coat over the metal lath and trowel, filling all voids at a rate of 25-30 square feet per mix. The metal lath must be completely covered in the GU80-1 Base Coat.
3. Allow the GU80-1 Base Coat to dry for a minimum of 6 hours prior to applying the next application. If the base coat does not cover the lath completely, a screed coat is required.

B. POLYMER MODIFIED ASPHALT (PMA) MEMBRANE APPLICATION

1. Detailing
 - a. Sloping of the structural deck surface at 1/4" per foot (6.4mm/.3m) or per local Building Code requirements.
 - b. At all horizontal / vertical junctures and projections PD 2014 Reemay Fabric shall be installed unless otherwise specified by Pli Dek, Inc. Apply 30 mils of PMA to areas which PD 2014 Reemay Fabric will be applied. Embed PD 2014 Reemay Fabric Install the specified system on top of the horizontal leg of the PD 2014 Reemay Fabric. Any areas that will be exposed to the elements are to be covered with 30 mils WFT of PMA-UV.
 - c. At expansion joints, contact Pli-Dek Systems, Inc. for specific job-site condition recommendations.
 - d. All pre-treat coat must cure a minimum of 12 hours prior to the application of the membrane.
 - e. All surfaces of pre-treat or sealant preparations shall be wiped clean with Xylene prior to the application of the field membrane.
2. Membrane Preparation
 - a. The PMA shall be kept warm, maintaining a minimum temperature of 40°F.
 - b. Mix the PMA material with a paddle mixer on a low speed drill for a minimum of 5 minutes prior to installation of the membrane.
3. Standard Application

- a. Application of the first coat of Pli-Dek Waterproofing Membrane – PMA shall be installed by squeegee, or roller application at a rate of 30 mils (50 square feet per gallon) wet film thickness (WFT).
- b. Lay PD-2014 Reemay Fabric or Poly Scrim into the wet PMA shall have overlaps of 2” minimum and end laps of 4”. Stagger all end overlaps. Allow the first coat of PMA and PD-2014 Reemay or Poly Scrim to set a minimum of 12 hours (depending on temperature, more time may be required) prior to the installation of additional coats of PMA.
- c. Application of the second coat of Pli-Dek Waterproofing Membrane – PMA shall be installed by squeegee or roller application at a rate of 30 mils (50 square feet per gallon) for a total thickness of 60 mils minimum wet film thickness (WFT).
- d. Apply a coat of PMA-UV 6” minimum above the finish slab at a rate of 45 mils (30 to 45 square feet per gallon) wet film thickness (WFT).

C. COLD RUBBER HIGH BUILD (CR) MEMBRANE APPLICATION

1. Sloping of the structural deck surface at 1/8” per foot, or per local Building Code requirements.
2. Shrinkage cracks shall be treated with a pre-treat coat of Pli-Dek Waterproofing Membrane – Cold Rubber High Build (60 mil).
3. Moving construction or structural cracks greater than 1/16” (1.5 mm) shall be routed out and sealant (polyurethane/ASTM C 920) installed prior to the installation of the Pli-Dek Waterproofing Membrane.
4. At all horizontal / vertical junctures and projections a sealant fillet (cant) of 3/4 “X 3/4” (polyurethane/ASTM C 920) shall be installed.
5. Caulking must cure a minimum of 12 hours prior to the application of the membrane.
6. Pli-Dek Waterproofing Membrane – Cold Rubber High Build shall be installed by roller, trowel, or smooth squeegee application at a rate of 60 to 120 mils (25 square foot per gallon) wet film thickness (WFT). Allow membrane to cure a minim of 2-4 hours before proceeding to subsequent coats. Cure time will vary depending on temperature and humidity.
7. If more than 48 hours pass between coats, the surface *must be* primed with the Pli-Dek Cold Rubber Primer.
8. Contact Pli-Dek for additional information when installing at a thickness above 90 mils in a single pass.

D. HOT RUBBERIZED ASPHALT (HR) MEMBRANE APPLICATION

1. Sloping of the structural deck surface at 1/4” per foot (6.4mm/.3m) or per local Building Coderequirements.

2. All surfaces to receive HR require primer to insure adhesion to the substrate. Asphalt Primer shall be installed at a rate of 200 square feet per gallon by roller or sprayer.
3. Shrinkage cracks shall be treated with a pre-treat coat of Pli-Dek Waterproofing Membrane – HR (60 mil). Moving construction or structural cracks greater than 1/8” (1.5mm) shall be routed out and sealant (polyurethane/ASTM C 920) installed prior to installing a pre-treat coat of Pli-Dek Waterproofing Membrane.
4. At all horizontal / vertical junctures and projections a (cant) of 3”x 3” with HR at a rate of 90 mil and PD- 2014 Reemay Fabric or PD Neoprene Flashing embedded into the HR.
5. At expansion joints, contact Pli-Dek Systems, Inc. for specific job-site condition recommendations.
6. All metal surfaces of pre-treat or sealant preparations shall be wiped clean with Xylene prior to the application of the field membrane.
7. The membrane shall be heated in double jacketed, oil bath or air jacketed melter with mechanical agitation, specifically designed for the preparation of a rubberized asphalt membrane.
8. Heat membrane until membrane can be drawn-free flowing at a temperature range between 350°F (176°C) and 400°F (204°C).
9. After applying Primer application of the first coat of Pli-Dek Waterproofing Membrane – HR shall be installed by squeegee application at a rate of 60 mils wet film thickness (WFT).
10. Lay PD-2014 Reemay Fabric into the HR, it shall have overlaps of 2” minimum and end laps of 4”. Stagger all end overlaps. Immediately install the second coat of HR over the PD-2014 Reemay fabric at a rate of 60 mils wet film thickness (WFT).
11. Contact Pli-Dek for additional information with regards to the use of a Separation Sheet.

E. PROTECTION COURSE

1. Specified protection course is placed over properly cured Pli-Dek Fluid Applied Waterproofing Membrane (as specified).
 - a. Layout specified protection course over the cured Pli-Dek Fluid Applied Waterproofing Membrane with a minimum of 1½” side overlaps and 3” end laps.
 - b. Cut and fit the specified protection course around penetrations with a maximum of 1” variance from the penetration

F. DRAIN BOARD

1. PD Drain Board as specified may be placed over the specified protection board and/or properly cured Pli-Dek Fluid Applied Waterproofing Membrane.
 - a. Roll the specified PD Drain Board over the protection board (if specified) or over the cured Fluid Applied Waterproofing

- b. Membrane.
Butt the side and roll ends together and overlap the filter fabric on to the adjacent roll to provide a continuous mat for separation of soils or overburden.
 - c. Cut and fit the PD Drain Board around penetrations with a maximum of 1" variance from the penetration.
2. On horizontal application, it is recommended tape is applied to seams to prevent debris from getting into the drainage system.

* The Trained Applicator indicates certain employees of the company have been instructed in the proper application of Pli-Dek products and have received copies of the Pli-Dek Application Instructions and Specifications. The Trained Contractor Program is not an apprenticeship. Each trained contractor is an independent company and bears responsibility for its own workmanship. Pli-Dek Systems Inc. assumes no liability for the workmanship of a trained contractor.

G. CLEAN UP

- 1. Uncured material can be removed with a solvent. Cured material can only be removed mechanically; care must be taken.

H. FLOOD TESTING

- 1. The Pli-Dek Fluid Applied Waterproofing Membrane shall be properly cured prior to water testing.
- 2. Flood Testing is recommended per ASTM D 5957 with 2" of water for a minimum of 24 hours.
- 3. As an alternative, Electronic Field Vector Mapping may be used.

I. LIMITATIONS

- 1. Application Temperatures: 40°F (4°C).
- 2. Cure times are dependent on environmental conditions, substrate temperature, air temperature, humidity, wind speed, etc. Care must be taken to ensure that the product is applied in a uniform fashion; the products should not be allowed to puddle.

IV. Slip and Fall Precautions

OSHA, American Disabilities Act (ADA), and The Federal Housing Act (FHA) have now set enforceable standards for slip-resistance on pedestrian surfaces. Pli-Dek Systems, Inc. recommends the use of angular slip-resistant aggregate in all coatings or flooring systems that may be exposed to wet, oily/greasy, or otherwise potentially slippery conditions. It is the end user's responsibility to provide a flooring system that meets current safety standards. Pli-Dek Systems, Inc or its sales agents will not be responsible for injury incurred in a slip and fall accident. Please consult local building codes for the current coefficient of friction requirement.

Disclaimer

Information contained in this specification conforms to standard detail and product recommendations for the installation of the Pli-Dek products as of the date of publication of this document and is presented in good faith. Pli-Dek Systems, Inc. assumes no liability, expressed or implied, as to the architecture, engineering or workmanship of any project. To ensure that you are using the latest, most complete information, contact Pli-Dek Systems, Inc., at: